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For: Credit Card Verifying Apparatus

Cross-Reference To Prior Application

The present application claims priority of U.S. provisional application serial number  
5 60/158,432 filed October 12, 1999.

Background of the Invention

The present invention relates to novel configuration of electronic communications apparatus, and more particularly to the field of apparatus having wireless credit card verification ability with long, DC powered operating life.

In many types of commercial transaction services are provided at, or products are delivered to a location where the customer is located, but which is remote from the usual business premises of the vendor. It is desirable in such situations that the delivery person or service provider have a portable and wireless means of verifying authorized credit access and accepting credit payment from the customer at the latter's location. An example of such equipment is found in U.S. Patent No. 5,334,842 of Martinez, issued August 2, 1994. This equipment operates from the DC power supply provided by the standard, built-in batteries which are removably positioned in and provide operating power to the cellular phone, requiring frequent recharging of the batteries in high volume applications. There is also the necessity in the usual apparatus of this type of providing terminal-to-phone interface circuitry.

Summary of the Invention

In a first embodiment, the apparatus of the present invention consists basically of a credit card terminal, a cellular telephone, a terminal/phone interface, a rechargeable battery power

supply and, preferably portable recharging equipment. The terminal is of a commercially available type and is connected to, or preferably includes, a printer. The cell phone is also conventional and is connected to the terminal via a direct connection of the terminal's RS 232 output port and the cell phone's RS 232 serial input port, providing direct digital/digital interface. The phone may be operated for a time by power from its built-in batteries, but is operated at least some times while connected to the portable power supply, thus simultaneously providing operating power to the phone and charging power to its batteries from the portable power supply. All elements of the apparatus may be conveniently package for portable use in a novel configuration upon a pair of mounting plates.

The RS 232-configured serial input port of the cell phone is normally used for connect to a hand set and the RS 232 digital output port of the terminal is normally intended for connection to the serial port on a laptop or desktop computer. In a second disclosed embodiment, the cell phone/radio is connected directly to the microcontroller of the terminal, thereby eliminating the need for the interface circuitry and modem. That data is exchanged directly between the terminal and phone via this connection.

#### Brief Description of the Drawing

Figure 1 is a block diagram illustrating the components of the apparatus and their interconnection in a first embodiment;

Figure 2 is a plan view of certain elements of the apparatus in a preferred mounting arrangement;

Figure 3 is an end view of the elements of Figure 2 and additional elements completing the basic units of the apparatus in the preferred mounting arrangement of this embodiment of the

invention; and

Figure 4 is a block diagram illustrating the components of a second embodiment of the invention and their manner of interconnection.

### Detailed Description

5 Referring now to the drawing, the preferred components and electrical interconnection thereof are shown in block diagram form. Reference numeral 10 denotes an entirely conventional cellular telephone having the usual batteries within the phone housing for providing operating power to the phone for, at most, a few hours of on-line time. Cell phone 10 is connected, during at least some of its operating time, to external battery 12 which may be recharged by insertion of plug 14 into an automobile cigarette lighter receptacle, or by insertion of plug 16 into a standard, 110 v AC wall receptacle.

10 Data terminal 18 is also a conventional item and includes the usual slot or groove for swinging a magnetically coded credit card and/or other credit data entry means. Printer 20 is a preferably connected to, or built into, terminal 18 to provide a permanently printed record of transactions at sites where conducted. Battery 12 also provides DC operating power to terminal 18 and printer 20. Cell phone 10 and terminal 18 are connected to one another through interface 11, also a conventional piece of equipment.

15 A preferred mounting arrangement for the above-described components is illustrated in Figures 2 and 3. Cell phone 10, battery 12 and interface 22 are either permanently or removably mounted upon a flat, bottom plate 24. Top plate 26 covers cell phone 10 and interface 22, and terminal 18 is mounted on the side of top plate 26 opposite cell phone 10. Printer 20 covers

battery 12 and a portion of top plate 26 on the side opposite interface 22. Using present, commercially available components, bottom plate 24 may be on the order of 8 by 10 inches, and top plate 26 on the order of 8 by 7 inches. The entire assemblage of components may have a weight of a few pounds and may be carried in a backpack or pouch with shoulder strap.

5           Turning now to Figure 4, the invention is shown in another embodiment wherein a single data terminal 28 includes cellular radio/telephone 30, microcontroller 32 and printer and/or other peripheral equipment 34. Data is passed directly between phone 30 and controller 32, thereby eliminating the need for interface circuitry and modem which are employed in the preceding embodiment. This reduces both the cost and power requirements of the system.